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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,773	11/11/2003	Shinichi Nakamura	9319H-000587	4378
27572	7590	04/12/2006	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			KIM, CHRISTOPHER S	
			ART UNIT	PAPER NUMBER
			3752	

DATE MAILED: 04/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/705,773

Applicant(s)

NAKAMURA ET AL.

Examiner

Christopher S. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4,6-11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) 15 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4,6-11,13,14 and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 27, 2006 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

3. Claims 15 and 16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on January 12, 2005.

The restriction requirement directed to claims 15 and 16 is reinstated. Claims 15 and 16 are considered product claims made by the apparatus of claim 13. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a materially different product or (2) that the

product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case the apparatus can be used for making a materially different product, i.e., a non-electrooptic device.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "suction pipeline gate valve includes a three-way valve having an atmosphere releasing port" recited in claim 9; the "first control means opens the atmosphere releasing port simultaneously with closing of the suction pipeline gate valve and opens the flow rate regulating valve again" recited in claim 9 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. The preamble of claims 14 is inconsistent with the parent claim. The claims should be presented in independent form. Otherwise, applicant is required to definitively state for the record that claim 14 requires all the limitations of claim 13. See MPEP 608.01(n) and Ex parte Porter, 25 USPQ2d 1144, 1147 (Bd. of Pat. App. & Inter. 1992).

Claim Rejections - 35 USC § 112

6. Claims 4, 6-11, 13, 14, 17-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Applicant argued, in the response filed on July 11, 2005, that the preamble of claim 4 should not be read into the body of the claim, i.e., applicant is claiming an "apparatus" (subcombination) rather than an "apparatus" and a "function liquid droplet

ejection head" (combination). Yet, the claim contains recitation defining functional relationship between the apparatus and the function liquid droplet ejection head. For example, "the ejector having a negative pressure sucking all of said nozzles of the function liquid droplet ejection head through the cap."

The term "close" in claims 4 and 13 is a relative term which renders the claim indefinite. The term "close" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what distance is being claimed by the recitation "brought into close contact."

The term "gradually" in claim 7 is a relative term which renders the claim indefinite. The term "gradually" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what rate of flow rate regulating valve closure is defined by the claim.

Claim 14 recites a method claim but fails to provide any method performing steps.

Claim Rejections - 35 USC § 103

7. Claims 4, 6, 7, 8, 10, 13, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace (4,362,572) in view of Brubaker, Sr. (3,584,836).

Regarding claim 4,

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Wallace discloses an apparatus comprising: a cap 20; an ejector 14, 18, 40; function liquid droplet ejection head 10; nozzles 28; working fluid source 44; a pressure detection means 42; a suction gate valve 24.

Wallace discloses that compressor 44 is used to maintain a vacuum in tank 40 but he does disclose details of how this is accomplished. One of ordinary skill in the art would have known to have provided a working fluid using the compressor 44 to create a negative pressure in tank 40. Brubaker, Sr. teaches to maintain a vacuum in chamber 32 and in attachment means 61 using a compressor (column 3, line 10) attached to conduit 39. Brubaker, Sr. utilizes venturi principle at connectors 37 and 63 to achieve vacuum in chamber 32 and attachment means 61. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have utilized the venturi principle to maintain the vacuum in Wallace's tank 40 as taught by Brubaker, Sr. to provide adequate suction.

Regarding claim 6,

Wallace discloses a pressure detection means 42 (pressure gauge) to alert an operator of failure the vacuum system (Wallace, column 4, lines 20-25). He also discloses a flow rate regulating valve 46 controlled by a first control means (system microprocessor, column 3, lines 25-30). The valve 46 is located in the vacuum line rather than in the working fluid line. The compressor of Brubaker, Sr. inherently has a valve and control system which is operated depending on the pressure gauge 38. It would have been obvious to a person having ordinary skill in the art at the time of the

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invention to have utilized the microprocessor of Wallace to control the compressor and/or valve of Brubaker, Sr. depending on the vacuum gauge to automate the device.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace (4,362,572).

With respect to claim 9, Wallace discloses the limitations of the claimed invention with the exception of the suction pipeline gate valve being made of a three way valve. Three way valves are well known in the art. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have made the valve 64 of Wallace a three way valve to vent the device.

Response to Arguments

9. Applicant's arguments filed January 27, 2006 have been fully considered but they are not persuasive.

Applicant argues that figure 8 shows the three way valve 123 of claim 9. While the specification may support the recitation "suction pipeline gate valve includes a three-way valve having an atmosphere releasing port" and the "first control means opens the atmosphere releasing port simultaneously with closing of the suction pipeline gate valve and opens the flow rate regulating valve again," the drawings, especially what is shown by reference number 123, does not show the claimed feature.

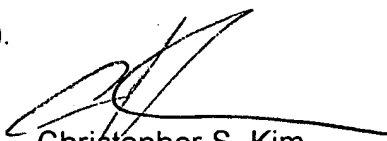
Remainder of applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571) 272-4905. The examiner can normally be reached on Monday - Thursday, 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (571) 272-4919. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christopher S. Kim
Primary Examiner
Art Unit 3752

CK